

Abstract

The invention provides an anti-reflection film secured with a sufficient defect-freeness, a polarizing plate comprising such an anti-reflection film and a display device comprising such an anti-reflection film or polarizing plate, and the anti-reflection film comprises at least one hard coat layer and an outermost low refractive index layer provided on a transparent support; wherein Ra (central line average roughness) of the surface of the anti-reflection film is not greater than $0.15\text{ }\mu\text{m}$, and the hard coat layer comprises at least one specific particle, and a polarizing plate and a display device comprising the film.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



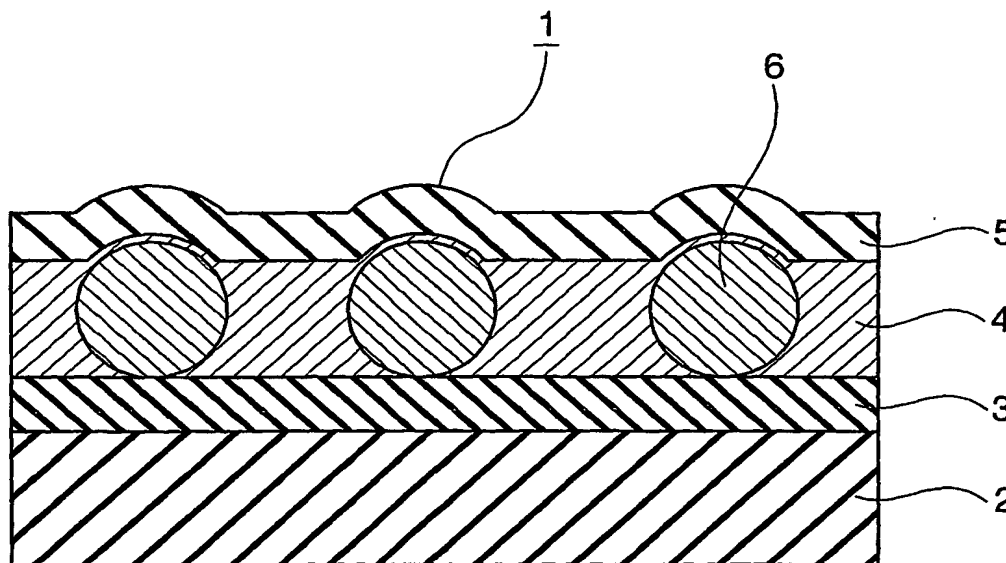
(43) International Publication Date
10 June 2004 (10.06.2004)

PCT

(10) International Publication Number
WO 2004/049018 A1

- (51) International Patent Classification⁷: **G02B 1/10**, 5/02, B32B 7/02
- (21) International Application Number: PCT/JP2003/014843
- (22) International Filing Date: 20 November 2003 (20.11.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2002-341186 25 November 2002 (25.11.2002) JP
2002-340913 25 November 2002 (25.11.2002) JP
- (71) Applicant (for all designated States except US): **FUJI PHOTO FILM CO., LTD.** [JP/JP]; 210, Nakanuma, Minami-Ashigara-shi, Kanagawa 250-0123 (JP).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **MATSUNAGA, Naohiro** [JP/JP]; c/o Fuji Photo Film Co., Ltd., 210, Nakanuma, Minami-Ashigara-shi, Kanagawa 250-0123 (JP).
- (74) Agents: **OGURI, Shohei** et al.; Eikoh Patent Office, ARK Mori Building, 28th Floor, 12-32, Akasaka 1-chome, Minato-ku, Tokyo 107-6028 (JP).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ANTI-REFLECTION FILM, POLARIZING PLATE AND LIQUID CRYSTAL DISPLAY DEVICE



(57) Abstract: The invention provides an anti-reflection film secured with a sufficient defect-freeness, a polarizing plate comprising such an anti-reflection film and a display device comprising such an anti-reflection film or polarizing plate, and the anti-reflection film comprises at least one hard coat layer and an outermost low refractive index layer provided on a transparent support, wherein Ra (central line average roughness) of the surface of the anti-reflection film is not greater than 0.15 μm and the hard coat layer comprises at least one specific particle, and a polarizing plate and a display device comprising the film.